itself is a discipline or field that incorporated a number of research areas. The institutions developed to serve it, especially the American Society for Cell Biology and the *Journal of Cell Biology*, took as their focus investigations into the various organelles of the cell and their functioning. Even when they worked in different research areas, the investigators who affiliated with these organizations shared a common mission of understanding the structure and function of the mechanisms comprising cells. They also shared a number of research instruments and techniques, especially electron microscopy and cell fractionation.

Accounts of disciplines sometimes treat them as eternal, non-temporal entities. My reference to the creation of cell biology beginning in the 1940s highlights the fact that they are historical entities. Starting in the nineteenth century new disciplines have repeatedly arisen. New disciplines or research areas can emerge for any one of a number of reasons. Sometimes a particular investigative strategy and a mission and domain adapted to it arise within a discipline and the divergence is not comfortably accommodated (e.g., molecular biology arose in part from biochemistry but separated, producing an uneasy relationship for many years).[7] Sometimes a genuinely new domain comes into existence along with people, methods, and a mission (e.g., the rise of computer science in the mid-twentieth century). A very common pattern, though, is for new disciplines to emerge in an unoccupied domain lying between existing disciplines for which no existing discipline possesses the needed research tools.

Research in contemporary science is often interdisciplinary in character, and interdisciplinarity is often touted as a virtue. But there has been little discussion of the desired outcome of interdisciplinary research. The best account remains Darden and Maull's (1977) account of what they called *interfield theories*. They described an interfield theory as "a different type of theory . . . which sets out and explains the relations between fields" (p. 48). They suggested and discussed several types of interfield relation: (a) structure-function, e.g., physical chemistry targets the structure of molecules while biochemistry describes their function; (b) physical location of a postulated entity or process, e.g., the chromosomes identified in cells by cytologists provide the physical location of the genes postulated by geneticists (a case that also exemplifies structure–function and part–whole relations); (c) physical nature

[7] There are numerous books and papers on this case, but see especially the Fall 1996 special issue of *Journal of the History of Biology*, 29 (3), on "The tools of the discipline: Biochemists and molecular biologists." Rheinberger, Chadarevian, Gaudillière, and Burian emphasized methods and Creager, Gaudillieère, and Kay attended particularly to individuals and institutions.